

CLAIMS

We Claim:

- 1 1. A method comprising the following:
2 capturing an image using a color filter array;
3 detecting a plurality of color components of light incident upon a color
4 sensor;
5 generating an average intensity value for each of the plurality of color
6 components; and,
7 using the average intensity values for the plurality of color components
8 to calculate a white balance for the image captured by the color filter array.

- 1 2. A method as in claim 1:
2 wherein each of the plurality of color components is an analog value; and,
3 wherein each of the average intensity values is a digital value.

- 1 3. A method as in claim 1 wherein the method is performed by a digital
2 camera.

- 1 4. A method as in claim 1 wherein the plurality of color components
2 include a red component, a green component and a blue component.

- 1 5. A method as in claim 1:

2 wherein the plurality of color components include a red component, a
3 green component and a blue component; and,
4 wherein the average intensity values include an average red intensity
5 value derived from the red component, an average green intensity value
6 derived from the green component and an average blue intensity value derived
7 from the blue component.

1 6. A method as in claim 5:

2 wherein the red component, the green component and the blue
3 component are analog values; and,
4 wherein the average red intensity value, the average green intensity
5 value and the average blue intensity value are digital values.

1 7. A method as in claim 1 wherein capturing the image and detecting the
2 plurality of color components are performed simultaneously allowing for
3 parallel processing.

1 8. A device that takes an image, comprising:

2 a color filter array that captures an image;
3 a color sensor that detects a plurality of color components of incident
4 light;
5 a converter that generates an average intensity value for each of the
6 plurality of color components; and,

7 white balance calculator that uses the average intensity values for the
8 plurality of color components to calculate a white balance for the image
9 captured by the color filter array.

1 9. A device as in claim 8:
2 wherein each of the plurality of color components is an analog value; and,
3 wherein each of the average intensity values is a digital value.

1 10. A device as in claim 8 wherein the device is a digital camera.

1 11. A device as in claim 8 wherein the plurality of color components
2 include a red component, a green component and a blue component.

1 12. A device as in claim 8:
2 wherein the plurality of color components include a red component, a
3 green component and a blue component; and,
4 wherein the average intensity values include an average red intensity
5 value derived from the red component, an average green intensity value
6 derived from the green component and an average blue intensity value derived
7 from the blue component.

1 13. A device as in claim 12:

2 wherein the red component, the green component and the blue
3 component are analog values; and,
4 wherein the average red intensity value, the average green intensity
5 value and the average blue intensity value are digital values.

1 14. A device as in claim 8 wherein the color sensor includes, for each
2 color component, a photo sensor with an integrated filter.

1 15. A device that takes an image, comprising:
2 color filter array means for capturing an image;
3 color sensor means for detecting a plurality of color components of
4 incident light;
5 converter means for generating an average intensity value for each of the
6 plurality of color components; and,
7 white balance means for using the average intensity values for the
8 plurality of color components to calculate a white balance for the image
9 captured by the color filter array.

1 16. A device as in claim 15:
2 wherein each of the plurality of color components is an analog value; and,
3 wherein each of the average intensity values is a digital value.

1 17. A device as in claim 15 wherein the device is a digital camera.

1 18. A device as in claim 15 wherein the plurality of color components
2 include a red component, a green component and a blue component.

1 19. A device as in claim 15:
2 wherein the plurality of color components include a red component, a
3 green component and a blue component; and,
4 wherein the average intensity values include an average red intensity
5 value derived from the red component, an average green intensity value
6 derived from the green component and an average blue intensity value derived
7 from the blue component.

1 20. A device as in claim 18:
2 wherein the red component, the green component and the blue
3 component are analog values; and,
4 wherein the average red intensity value, the average green intensity
5 value and the average blue intensity value are digital values.